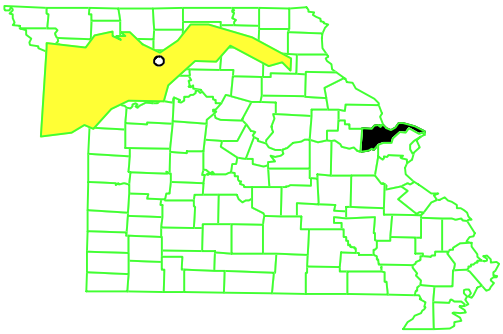
WELDON SPRING QUARRY/PLANT/ PITTS (USDOE/ARMY)

MISSOURI
EPA ID# MO3210090004

EPA Region 7
City: 25 miles west of St. Louis
County: St. Charles County
Other Names: Weldon Spring-Raffinate Pitts, Weldon Springs Chemical Plant



SITE DESCRIPTION

The Weldon Spring Quarry/Plant/Pitts (USDOE/Army) site covers 230 acres and is located between the Missouri and Mississippi Rivers. This site is closely associated with the nearby Weldon Spring Former Army Ordnance Works NPL site. A series of land transfers in the 1950s gave the Atomic Energy Commission (AEC), later called the U.S. Department of Energy (DOE), 220 acres of the original Ordnance Works area. The DOE now is responsible for the contamination, both radioactive and non-radioactive, on the property. The site includes a 51-acre disposal area, a 169-acre abandoned uranium feed materials plant, various smaller properties, and a 9-acre former limestone quarry located 4 miles from the plant. From 1941 to 1944, the Department of the Army operated an explosives production plant on the site. Due to frequent spills, wastewater containing sulfonate derivatives contaminated surface water and groundwater. The Ordnance Works area was closed at the end of World War II, and the processing structures were demolished. In 1955, the AEC acquired a portion of the Ordnance Works area for construction of a uranium feed materials plant. Mallinckrodt, Inc. operated the plant under a contract with the AEC from 1957 to 1966. The plant converted uranium concentrates to uranium tetrafluoride and uranium metal. Thorium ore, also a radioactive metal, was processed. The residues from the processing were disposed of in four large open pits. During that period, the plant, buildings, equipment, soil surface, sewer system, and the drainage into the Missouri River became contaminated with uranium, thorium, and their radioactive decay products. From 1943 until 1957, the U.S. Army used an abandoned limestone quarry located about 4 miles southwest of the plant site for the disposal of unknown quantities of materials contaminated with trinitrotoluene (TNT) and dinitrotoluene (DNT) residues. The AEC acquired the site in 1958 and used the quarry from 1959 to 1966 to dispose of uranium, thorium, and radium residues and

contaminated materials and equipment. From 1966 to 1969, the Army deposited additional TNT-contaminated materials in the quarry.

The quarry is located 3/4 of a mile from the St. Charles County well field, which is used as a drinking water source for approximately 70,000 people. The population living within 3 miles of the site is 5,000 people.

Site Responsibility:

This site is being addressed through Federal actions.

NPL LISTING HISTORY	
Proposed Date:	10/15/84
Final Date:	07/22/87
Deleted Date:	

THREATS AND CONTAMINANTS

Groundwater is contaminated with TNT, DNT, and other nitroaromatic compounds. The soil is contaminated with radionuclides, TNT, DNT, polycyclic aromatic hydrocarbons (PAHs), polychorinated biphenyls (PCBs) from transformers, and heavy metals. Off-site surface water is contaminated with uranium. Accidental ingestion of and direct contact with contaminated groundwater, surface water, or soil may cause a potential health hazard. Adjacent wildlife and recreational areas may be threatened due to off-site migration of the contaminants. Contaminant migration from the quarry to the adjacent Missouri River alluvium poses a potential threat to the County well field.

CLEANUP APPROACH

Response Action Status

Immediate Actions: The DOE began interim cleanup actions at this site in 1987, which have included removing overhead piping and asbestos, consolidating and storing containerized chemicals, removing electric lines and poles, cleaning up radioactive soil from Army Reserve properties, dismantling the chemical plant structures, removing PCB transformers, constructing stormwater diversion dikes to reduce off-site migration, and constructing two wastewater treatment plants. Approximately 13,000 gallons of PCB fluids and flushing solutions were removed and transported to an off-site incineration facility. All 40 buildings and other structures were dismantled and placed in temporary storage. Treatment and discharge of stormwater and impounded surface water will continue through the life of the project.

Source Control, Treatment, and Disposal: In 1986, the DOE began an investigation to determine the nature and extent of contamination of the air, lakes and streams, sludges, and 40 structures, and to identify cleanup alternatives. The studies were completed in 1993, and final cleanup strategies for contaminated areas were initiated to include removal and treatment of contaminated soils and sludges, construction of onsite containment cell, and disposal of approximately 1 million cubic yards of waste materials. Construction of the disposal cell began April 1997, and is expected to be closed in 2001.

Quarry Bulk Waste: In 1990, the EPA chose to excavate and to temporarily store quarry bulk wastes on site. Wastes were transported over a haul road constructed solely for this purpose. Over 110,000 cubic yards of equipment, soil, drums, and debris were placed in temporary storage requiring over 10,000 roundtrips. The wastes have since been placed in the permanent on site disposal cell.

Quarry Residuals: An investigation focusing on quarry residuals and groundwater contamination was conducted. A final decision for the quarry area was made in 1998 that encompassed quarry restoration and groundwater monitoring.

Groundwater Chemical Plant: In mid-1995, the DOE began an investigation of the Groundwater Chemical Plant. This investigation, scheduled for completion in late 2002, will lead to the selection of final cleanup. In September 2000 an interim decision was made allowing for focused treatment of TCE contaminated groundwater through in-situ oxidation.

Site Facts: Under a 1992 Interagency Agreement with the EPA, the DOE will conduct cleanup actions at the quarry, as well as the plant area and nearby radioactive contaminated properties.

ENVIRONMENTAL PROGRESS

The permanent disposal of contaminated soil, materials, and structures, and the treatment of impounded surface water described above, have reduced the potential for exposure to hazardous substances at the Weldon Spring Quarry/Plant/Pitts site. Study of the potential for further groundwater remediation is ongoing.

SITE REPOSITORY

Spencer Creek Branch, St. Charles City-County Library, 425 Spencer Road, St. Peters, MO 63376

Superfund Records Center
901 N. 5th St.
Kansas City, KS 66101
Mail Stop SUPR
(913)551-4038

REGIONAL CONTACTS

SITE MANAGER: Dan Wall
E-MAIL ADDRESS: wall.daniel@epa.gov
(913) 551-7710

COMMUNITY INVOLVEMENT COORDINATOR:
PHONE NUMBER:

PUBLIC INFORMATION CENTER:
E-MAIL ADDRESS:

STATE CONTACT:
PHONE NUMBER:

MISCELLANEOUS INFORMATION

STATE: MO
073S
CONGRESSIONAL DISTRICT: 09
EPA ORGANIZATION: SFD-SUPR/FFSE

MODIFICATIONS